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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
SISSON, BRADLEY L	
ART UNIT	**PAPER NUMBER**
1634	

DATE MAILED: 03/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/494,212	LIN ET AL.	
	Examiner	Art Unit	
	Bradley L. Sisson	1634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 November 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3,7-18,20,22,25,26 and 29-35* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,7-18,20,22,25,26 and 29-35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 January 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *17 November 2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 17 November 2004 has been entered.

Specification

2. The specification contains numerous bibliographic citations, yet it has not been found to contain any statement that the cited documents have been incorporated by reference. As set forth in *Advanced Display Systems Inc. v. Kent State University* (Fed. Cir. 2000) 54 USPQ2d at 1679:

> Incorporation by reference provides a method for integrating material from various documents into a host document--a patent or printed publication in an anticipation determination--by citing such material in a manner that makes it clear that the material is effectively part of the host document as if it were explicitly contained therein. *See General Elec. Co. v. Brenner*, 407 F.2d 1258, 1261-62, 159 USQP 335, 337 (D.C. Cir. 1968); *In re Lund*, 376 F.2d 982, 989, 153 USPQ 625, 631 (CCPA 1967). **To incorporate material by reference, the host document must identify with detailed particularity what specific material it incorporates and clearly indicate where that material is found in the various documents.** *See In re Seversky*, 474 F.2d 671, 674, 177 USPQ 144, 146 (CCPA 1973) (providing that incorporation by reference requires a statement "clearly identifying the subject matter which is incorporated and where it is to be found"); *In re Saunders*, 444 F.2d 599, 602-02, 170 USPQ 213, 216-17 (CPA 1971) (reasoning that a rejection or anticipation is appropriate only if one reference "expressly incorporates a particular part" of another reference); *National Latex Prods. Co. v. Sun Rubber Co.*, 274 F.2d 224, 230, 123 USPQ 279, 283 (6th Cir. 1959) (requiring a specific reference to material in an earlier application in order to have that material considered a part of a later application); *cf. Lund*, 376 F.2d at 989, 13 USPQ at 631 (holding that **a one**

> **sentence reference to an abandoned application is not sufficient to incorporate from the abandoned application into a new application**). (Emphasis added.)

Attention is also directed to MPEP 608.01(p)I, which, in pertinent part, is reproduced below:

> Mere reference to another application, patent, or publication is not an incorporation of anything therein into the application containing such reference for the purpose of the disclosure required by 35 U.S.C. 112, first paragraph. In re de Seversky, 474 F.2d 671, 177 USPQ 144 (CCPA 1973). In addition to other requirements for an application, the referencing application should include an identification of the referenced patent, application, or publication. Particular attention should be directed to specific portions of the referenced document where the subject matter being incorporated may be found. (Emphasis added)

Accordingly, the cited documents are not considered to have been incorporated by reference and as such, have not been considered with any effect towards their fulfilling, either in part or in whole, the enablement, written description, or best mode requirements of 35 USC 112, first paragraph.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1, 3, 7-18, 20, 22, 25, 26, and 29-35 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Attention is directed to the decision in *University of Rochester v. G.D. Searle & Co.* 68 USPQ2D 1424 (Fed. Cir. 2004) at 1428:

To satisfy the written-description requirement, the specification must describe every element of the claimed invention in sufficient detail so that one of ordinary skill in the art would recognize that the inventor possessed the claimed invention at the time of filing. Vas-Cath, 935 F.3d at 1563; see also Lockwood v. American Airlines, Inc., 107 F.3d 1565, 1572 [41 USPQ2d 1961] (Fed. Cir. 1997) (patent specification must describe an invention and do so in sufficient detail that one skilled in the art can clearly conclude that "the inventor invented the claimed invention"); In re Gosteli, 872 F.2d 1008, 1012 [10 USPQ2d 1614] (Fed. Cir. 1989) ("the description must clearly allow persons of ordinary skill in the art to recognize that [the inventor] invented what is claimed"). Thus, an applicant complies with the written-description requirement "by describing the invention, with all its claimed limitations, not that which makes it obvious," and by using "such descriptive means as words, structures, figures, diagrams, formulas, etc., that set forth the claimed invention." Lockwood, 107 F.3d at 1572.

5. For convenience, claims 1 and 22, the only independent claims under consideration in the instant application, are reproduced below.

Claim 1 (currently amended). A method of generating amplified sense-oriented full-length messenger RNAs up to 4.9 kilo-base nucleotides using polymerase reactions, comprising the steps of:

(a) providing a plurality of intracellular messenger RNAs for following steps (b) to (e);

(b) contacting said messenger RNAs with a plurality of first oligodeoxythymidylate-containing primers to form a plurality of first-strand complementary DNAs, wherein said first-strand complementary DNAs are generated by reverse transcription of said messenger RNAs with extension of said first primers;

(c) permitting terminal extension of said first-strand complementary DNAs to form a plurality of polynucleotide-tailed first-strand complementary DNAs, wherein said polynucleotide-tailed first-strand complementary DNAs are tailed with multiple copies of deoxyribonucleotides;

(d) incubating denatured said polynucleotide-tailed first-strand complementary DNAs with a plurality of second RNA promoter-linked primers to form a plurality of double-stranded complementary DNAs, wherein said double-stranded complementary DNAs are generated by extension of DNA polymerase activity with said second RNA promoter-linked primers; and

(e) permitting transcription of said double-stranded complementary DNAs to form a plurality of amplified sense-oriented full-length RNAs, wherein said amplified sense-oriented full-length RNAs are generated by extension of RNA polymerase activity through the RNA promoter region of said double-stranded complementary DNAs.

Claim 22 (currently amended): A method of performing improved messenger RNA amplification up to 4.9 kilo-base nucleotides, comprising the steps of:

(a) providing a plurality of messenger RNAs for following steps (b) to (f);

(b) generating a plurality of polynucleotide-tailed complementary DNAs from said messenger RNAs, wherein said polynucleotide-tailed complementary DNAs are reverse-transcribed from said messenger RNAs and tailed by multiple deoxynucleotides in the ends;

(c) permitting denatured said polynucleotide-tailed complementary DNAs to form a plurality of double-stranded complementary DNAs, wherein said double-stranded complementary DNAs contain a complementary DNA sequence flanked with an RNA polymerase promoter and a polynucleotide-tail; and

(d) incubating said double-stranded complementary DNAs in a plurality of promoter- and tail-dependent extension systems, and thereby providing a plurality of amplified RNAs from said messenger RNAs.

6. For purposes of examination, the claimed methods have been interpreted as encompassing the generation of only full-length cDNAs and mRNAs up to a 4.9 kilo-base nucleotide, performing an infinite number of cycles of amplification, and the addition of DNA and RNA polymerases but a single time for any number of cycles of amplification.

7. While applicant has amended the claims such that claim 2 has been deleted, claims 1, 3, 7-18, 20, 22, 25, 26, and 29-35 still fairly encompass performing a infinite number of cycles of amplification.

8. Page 10, last paragraph, teaches that one must add RNA polymerase "in every round of transcription due to the denaturation step."

9. In view of the breadth of the claims, and the specific limitations taught in the specification, the specification has not been found to provide an adequate written description of the full scope of the claimed invention so as to reasonably suggest that applicant, at the time of filing, had possession of the now-claimed invention. Accordingly, claims 1, 3, 7-18, 20, 22, 25, 26, and 29-35 are remain rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.

New Matter

10. Claims 1 and 22 have been amended such that they now recite the limitation that the upper size limit of the amplified mRNA is 4.9 kb. In support of this limitation attention is directed to Example 4 (page 15 of the specification) ad to Figure 4. A review of both of these portions of the disclosure fails to find any reference of 4.9 kb, much less an indication that applicant considered that 4.9 would be an upper limit to the size of any amplicon. Therefore, and in the absence of convincing evidence to the contrary, claims 1 and 22 are deemed to comprise new matter. Claims 3, 7-18, 20, 25, 26, and 29-35 fail to overcome this issue and are similarly rejected.

11. Claims 1, 3, 7-18, 20, 22, 25, 26, and 29-35 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter that was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. As set forth in *Enzo Biochem Inc., v. Calgene, Inc.* (CAFC, 1999) 52 USPQ2d at 1135, bridging to 1136:

> To be enabling, the specification of a patent must teach those skilled in the art how to make and use the full scope of the claimed invention without 'undue experimentation.' " *Genentech, Inc. v. Novo Nordisk, A/S*, 108 F.3d 1361, 1365, 42 USPQ2d 1001, 1004 (Fed. Cir. 1997) (quoting *In re Wright*, 999 F.2d 1557, 1561, 27 USPQ2d 1510, 1513 (Fed. Cir. 1993)). Whether claims are sufficiently enabled by a disclosure in a specification is determined as of the date that the patent application was first filed, see *Hybritech, Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1384, 231 USPQ 81, 94 (Fed. Cir. 1986).... We have held that a patent specification complies with the statute even if a "reasonable" amount of routine experimentation is required in order to practice a claimed invention, but that such experimentation must not be "undue." See, *e.g.*, *Wands*, 858 F.2d at 736-37, 8 USPQ2d at 1404 ("Enablement is not precluded by the necessity for some experimentation . . . However, experimentation needed to practice the invention must not be undue experimentation. The key word is 'undue,' not 'experimentation.' ") (footnotes, citations, and internal quotation marks omitted). In *In re Wands*, we set forth a number of factors which a court may consider in determining whether a disclosure would require undue experimentation. These factors were set forth as follows: (1) the quantity of experimentation necessary, (2) the amount of direction or guidance presented, (3) the presence or absence of working examples, (4) the nature of the invention, (5) the state of the prior art, (6) the relative skill of those in the art, (7) the predictability or unpredictability of the art, and (8) the breadth of the claims. *Id.* at 737, 8 USPQ2d at 1404. We have also noted that all of the factors need not be reviewed when determining whether a disclosure is enabling. See *Amgen, Inc. v. Chugai Pharm. Co., Ltd.*, 927 F.2d 1200, 1213, 18 USPQ2d 1016, 1027 (Fed. Cir. 1991) (noting that the *Wands* factors "are illustrative, not mandatory. What is relevant depends on the facts.").

12. For purposes of examination, the method of said claims has been interpreted as encompassing the production of mRNA of any length, where said mRNA has secondary structures, and where virtually any DNA or RNA polymerase can be used.

13. The specification has been found to set forth the following five examples.

a. Example 1, page 13: "Cell Fixation and Permeabilisation."

b. Example 2, pages 13-14: "First Reverse Transcription and Polynucleotide Tailing of the First-Strand cDNAs"

c. Example 3, page 14: "Denaturation, Double-stranded cDNA Synthesis and Transcriptional Amplification"

d. Example 4, page 15: "Second Reverse Transcription, Denaturation, Double-Stranded cDNA Synthesis and mRNA Amplification"

e. Example 5, page 16: "Amplification Cycling Procedure"

14. The above-cited example, however, do not teach the skilled artisan how to overcome art-recognized problems and difficulties.

15. The claimed method clearly requires the use of a RNA polymerase so to generate a plurality of full-length mRNA. However, the use of RNA polymerase is not without difficulties. US Patent Publication 2003/0087275 teaches:

> [0051] The TATA box or the like, which may be comprised in the DNA sequence for regulating transcription of the invention can be found in various species ranging from simple eukaryotes such as baker's yeast to more complex organisms such filamentous fungi and humans. The TATA box assists in directing RNA polymerase (RNA polymerase 11) to the downstream mRNA initiation site. The RNA polymerase binds to regions of DNA, i.e., the RNA polymerase [*sic*] binding site often in general referred to as a promoter. The TATA box is in most cases necessary for transcription because the RNA polymerase normally cannot recognize the initiation sites on its own. The TATA box directs the RNA polymerase to the m RNA initiation site once the RNA polymerase has bound to the TATA box. Yet another problem occurs when the RNA polymerase scans for the TATA box. The RNA polymerase cannot recognize the TATA box on its own. It has to use (a) transcription factor(s) to find the TATA box. After the transcription factor(s) bind(s) to the TATA box, then the RNA polymerase can recognize and bind to the TATA box. Then the RNA polymerase binds to the transcription factor(s), which identify the TATA box. The TATA box then guides the RNA polymerase to the mRNA initiation site where transcription can begin. (Emphasis added)

The claimed method does not require any TATA box to be present in the cDNA, or any transcription factors be used. As shown above, both are required in order for the RNA polymerase to bind to the appropriate site on the cDNA such that transcripts are produced.

16. US Patent Publication 2003/0040099 teaches:

> [0015] However, successful generation of highly infectious cDNA clones has often been problematic due to the presence of mutations in the virus RNA template population

> caused by the inherent mutability of RNA viruses, the relatively low fidelity of the DNA polymerases used in cDNA synthesis, instability and toxicity of viral sequences in bacterial hosts, and the infidelity of the RNA polymerases used for in vitro transcriptions. (Emphasis added)

The specification is essentially silent as to how one of skill in the art is to be overcome the issue of fidelity. Assuming *arguendo*, that only full-length amplicons are produced, the specification is silent as to how the skilled artisan would be able to recognize those amplicons that have an incorrect sequence over that of one, which is correct. Accordingly, one may well produce "full length" mRNA, yet the sequence no longer encodes the intended protein, or any protein, if a mutation, e.g., substitution, occurs early on in the sequence.

17. US Patent 6,303,306 B1 states:

> Amplification efficiency is high in the amplification system based on replicated RNA. However, because of a poor heat stability of conventional enzymes, namely RNA dependent DNA polymerase, DNA dependent RNA polymerase and DNA dependent DNA polymerase, the reaction temperature does not have to be high, and non-specific hybridization between the nucleic acid as a template and the primer cannot be avoidable, so that decrease of the specificity is a problem. In addition, the instability of the enzymes creates a severe problem in supplying and storing enzymes, and storage in a frozen state or in a refrigerator is required. (Emphasis added)

With non-specific hybridization taking place, one may well achieve priming of the incorrect sequence. Additionally, the incorrectly primed sequence as well as the correctly primed sequence can give rise to further erroneous amplicons/transcripts when one considers the aspect of infidelity of the polymerases, be they DNA or RNA.

18. The claimed method also is considered to encompass the incorporation of fluorescently labeled nucleotides. However, the art recognizes that such nucleotides cannot be incorporated in RNA produced via a DNA dependent RNA polymerase. In support of this position, attention is directed to US Patent 6,140,053, which states:

> Another problem, which still needs to be resolved, is that DNA/RNA polymerases, which are able to use the four fluorescently labeled NTPs instead of the unmodified counterparts, have not been identified.

19. Yet another problem confronting RT-PCR is when the mRNA contains secondary structures. In support of this position, attention is directed to US Patent Publication 2003/0180737, which states:

> RNA molecules with secondary structure may be poorly represented in cDNA libraries. Populations of RNA with secondary structure may also yield cDNA libraries with a short insert size. Furthermore, RNA molecules containing secondary structure may be difficult to detect in assays such as reverse transcription-polymerase chain reaction (RT-PCR). (Emphasis added)

20. Attention is also directed to column 40 of Jones (US Patent 5,858,671), which teaches at length of the problems associated with enzymatic coupling efficiency and accuracy of nucleotides. As stated therein, "that even if the constituent enzymatic steps approach 100% completion, incompletely processed products can accumulate to significant levels. For example, during oligonucleotide synthesis of a 70-mer, requiring 69 couplings, a 99% coupling efficiency results in only 50% of the generated oligonucleotides being full length ($0.99^{69} = 0.50$)." In the present case, applicant is claiming a product that would be the result of 4,899 couplings, which, with 99% efficiency, would result 4.13×10^{-22} percentile coupling efficiency, an efficiency that clearly approximates 0%.

21. While a disclosure is not required to teach each and every embodiment encompassed by the claims, the specification, "in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the" invention. The record clearly indicates that the invention is drawn to an area of technology

replete with art-recognized difficulties. The instant disclosure, however, is essentially silent as to how one is to ensure that they obtain only full-length cDNA such that full-length mRNA is ultimately transcribed from the amplified cDNA population. The failure of the instant disclosure to fully enable the claimed invention unfairly and inappropriately shifts the burden of enablement from applicant to that of the public. As noted in *In re Fisher* 166 USPQ 18 (CCPA, 1970):

> In cases involving predictable factors, such as that, once imagined, other embodiments can be made without difficulty and their performance characteristics predicted by resort to known scientific laws. In cases involving unpredictable factors, such as most chemical reactions and physiological activity, the scope of enablement obviously varies inversely with the degree of unpredictability of the factors involved.

Here, however, the level of enabling disclosure provided does not vary inversely with the degree of unpredictability of the factors involved. The shifting of the burden of enablement is unfair and level of experimentation required for he public to practice the full breadth of the claimed invention is undue. Accordingly, and in the absence of convincing evidence to the contrary, claims 1, 3, 7-18, 20, 22, 25, 26, and 29-35 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement.

Response to argument

22. At page 8 of the response received 17 November 2004, hereinafter the response, argument is advanced that as a result of the cancellation of claims 2 and 23, the issue of significant accumulation of multiple deviations in the amplicons over that of the template, ahs been overcome.

23. The above argument ahs been fully considered and ahs not been found persuasive towards the withdrawal of the rejection for while claims 2 and 23 have been deleted, the remaining claims still encompass jut such an embodiment.

24. It is noted that at page 8-10 of the response that four references have been used as supporting a position being advanced by applicant's representative. As an initial matter, attention is directed to MPEP 2145.

> Attorney argument is not evidence unless it is an admission, in which case, an examiner may use the admission in making a rejection. See MPEP § 2129 and § 2144.03 for a discussion of admissions as prior art.
> The arguments of counsel cannot take the place of evidence in the record. In re Schulze, 346 F.2d 600, 602, 145 USPQ 716, 718 (CCPA 1965); In re Geisler, 116 F.3d 1465, 43 USPQ2d 1362 (Fed. Cir. 1997) ("An assertion of what seems to follow from common experience is just attorney argument and not the kind of factual evidence that is required to rebut a prima facie case of obviousness."). See MPEP § 716.01(c) for examples of attorney statements which are not evidence and which must be supported by an appropriate affidavit or declaration.

While applicant's representative has sought to underpin their argument by reliance upon publications, such showings do not take the place of sworn (declarations/affidavits) evidence and from which assurances that any statements or representations made are correct, as provided by 35 U.S.C. 25 and 18 USC 1001. *Ex parte Gray* 10 USPQ2d 1922 at 1928 (BPAI 1989). Accordingly, applicant's representative's argument is non-persuasive.

For the above reasons, and in the absence of convincing evidence to the contrary, claims 1, 3, 7-18, 20, 22, 25, 26, and 29-35 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement.

Conclusion

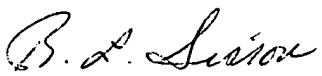
25. All claims are drawn to the same invention claimed in the application prior to the entry of the submission under 37 CFR 1.114 and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the application prior to entry under 37 CFR 1.114. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action after the filing of a request for continued examination and the submission under 37 CFR 1.114. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

26. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

27. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bradley L. Sisson whose telephone number is (571) 272-0751. The examiner can normally be reached on 6:30 a.m. to 5 p.m., Monday through Thursday.

28. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, W. Gary Jones can be reached on (571) 272-0745. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

29. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Bradley L. Sisson
Primary Examiner
Art Unit 1634

BLS
18 March 2005